

Applicants : D. Hugh McCabe *et al.*
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REMARKS

By this Amendment, the Abstract is provided, claims 1-4, 7 and 8 are amended, and claims 9-18 are added to recite features supported in the specification at, for example, paragraphs [0039] and [0056] (corresponding to paragraphs [0075] and [0097] in U.S. Patent Application Publication 2005/0128138). Accordingly, claims 1-18 are pending in this application. No new matter is added by any of these amendments.

Reconsideration based on the following remarks is respectfully requested.

I. Abstract Provision

The Office Action objects to the Abstract being absent from the application, as required under 37 CFR §1.72(b). Applicants respectfully assert that the originally application as filed included the Abstract, as evidenced by the cover page of U.S. Patent Application Publication 2005/0128138, published June 16, 2005 and the image file wrapper. Nonetheless, the Abstract is provided as attached to obviate the objection. Withdrawal of the objection to the Abstract is respectfully requested.

II. Indefiniteness Rejection under 35 U.S.C. §112, ¶2

The Office Action rejects claims 1-8 under 35 U.S.C. §112, second paragraph, as being indefinite. Claims 1-4, 7 and 8 have been amended to obviate this rejection in view of the Examiner's helpful comments. Withdrawal of the rejection under 35 U.S.C. §112, second paragraph is respectfully requested.

III. Anticipatory Rejection under 35 U.S.C. §102

The Office Action rejects claims 1-8 as being allegedly anticipated under 35 U.S.C. §102(b) over U.S. Patent 6,829,568 to Julier *et al.* (hereinafter "Julier"). This rejection is respectfully traversed.

Applicants respectfully assert that the basis of rejection under §102(b) is improper, because Julier qualifies as a reference only under §102(e). Specifically, Applicants' filing date antedates the December 7, 2004 issue date of Julier, and is less than one year after the October 30, 2003

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publication date of U.S. Patent Application Publication 2003/0204382. See MPEP §706.02(a)(II)(A). Applicants further assert that the Office Action does not identify the portions in Julier that allegedly teach or suggest any of the claimed features.

Applicants must surmise by inference those portions in Julier that form the asserted basis of the anticipatory rejection in the Office Action. Thus, Applicants assert that each element set forth in the claim cannot be established to have been found, as required for a proper rejection under 35 U.S.C. §102(a), (b) and (e). See MPEP §2131. As a consequence of these deficiencies, a subsequent Office Action that applies Julier as anticipating any of the rejected claims should also be non-final.

Applicants' claims are directed generally, for example, to multiple model (MM) radar tracking filter which controls a weighting applied to outputs of first and second model functions responsive to non-Markovian switching logic. For example, Applicants' independent claim 1 recites, *inter alia*, "multiple model (MM) radar tracking filter, including a feed back loop for providing a feedback signal to respective inputs of first and second model functions responsive to weighted outputs of the first and second model functions, wherein the feedback loop provides a feedback signal based on a convex sum of a weighted estimate produced by the MM radar tracking filter, and the MM radar tracking filter controls a weighting to the weighted outputs of the first and second model functions that are responsive to non-Markovian switching logic", and similarly recited in claim 2. Further, claims 3, 4, 7 and 8 recite analogous features. Applicants respectfully submit that Julier does not describe or suggest at least these claimed features.

Instead, Julier discloses a method for fusing signals. In particular, Julier teaches forming a fused signal (step 34) using covariance intersection or covariance addition. See, *e.g.*, col. 38, lines 46-54; col. 39, lines 10-21 and Fig. 2 of Julier. In addition, Julier teaches obtaining measured estimates (step 42) and selecting previously stored estimates (step 44) for determining split covariance components (step 46). Julier further teaches selecting weight factors (step 48) to normalize the estimates for minimizing the fused covariance size, and then summing the vector components of the estimates (step 50). See col. 39, lines 32-62 and Fig. 3 of Julier. Also, in the background, Julier teaches Kalman filter and covariance intersection equations with convex combination of mean and covariance estimates to estimate between statistically independent and dependent error information, as well as simultaneous localization and map (SLAM) building. See

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e.g., col. 5, line 50 – col. 7, line 45; col. 15, lines 15-37 of Julier. As a result, Julier does not describe or suggest Applicants' claimed features of providing a feedback signal to model functions responsive to non-Markovian switching logic. Further, Julier does not teach the feed back signal being based on a convex sum of a weighted estimate produced by the MM radar tracking filter that controls weighting of the model functions. These arguments also apply to similarly recited features in claims 2-4, 7 and 8, as well as claims 5 and 6 based on their dependence from claim 4.

Because the Office Action does not specify the portions of Julier considered to be most relevant for basing the rejection, Applicants respectfully observe that although Julier refers to the abbreviation "CA" (especially in relation to claim 6), the context applies to covariance addition (col. 12, line 49). In contrast, Applicants' disclosure refers to this abbreviation in context of a constant acceleration filter function (14, Fig. 3), in conjunction with a constant velocity filter function (12) for generating weighting signals by an adaptive switch mechanism function (22), none of which has any relationship to the methods described in Julier.

For at least these reasons, Applicants respectfully assert that the independent claims are patentable over the applied reference. The dependent claims are likewise patentable over the applied references for at least the reasons discussed, as well as for the additional features they recite. Consequently, all the claims are in condition for allowance. Thus, Applicants respectfully request that the rejection under 35 U.S.C. §102 be withdrawn.

IV. Additional Claims

New claims 9-18 have been added to further identify another aspect of Applicants' claimed invention by indicating that the first and second model functions correspond to constant velocity and constant acceleration, and that Adaptive Switching Logic represents the non-Markovian logic. It is respectfully submitted that no documents of record teach or suggest these features of Applicants' claims. These added dependent claims are likewise patentable over the applied reference for at least the reasons discussed, as well as for the additional features they recite.

V. Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully submit that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

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Should the Examiner believe that anything further is desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,



Gerhard W. Thielman
Registration No. 43,186

Attachment:
Replacement Abstract

Date: November 22, 2005

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